

Claims:

What is claimed is:

1. A system for projecting an image, comprising:
a cathode ray tube including a resonant microcavity phosphor and capable of producing telecentric light for an image; and
a lens assembly, the lens assembly comprising in order:
a spherical lens element,
an aspheric lens element, and
a set of positively powered lens elements.
2. The system of claim 1 wherein the aspheric lens element is negatively powered.
3. The system of claim 1 wherein the lens assembly further comprises an additional lens element adapted to locate the image.
4. The system of claim 1 wherein the lens element adapted to locate the image is a negatively-powered meniscus lens element.
5. The system of claim 1, wherein the lens assembly includes a field lens having a planar surface coupled to said image source.
6. The system of claim 5, wherein the cathode ray tube includes a faceplate and wherein the field lens is optically coupled to the faceplate.
7. The system of claim 6, wherein the lens assembly includes a planar gap between the faceplate and the field lens.

8. The system of claim 1 further comprising:
multiple cathode ray tubes, wherein each cathode ray tube is capable of projecting telecentric light for an image; and
a separate-lens assembly for each of said multiple cathode ray tubes.
9. A system for projecting an image, comprising:
a cathode ray tube including a resonant microcavity phosphor and a faceplate, said cathode ray tube capable of producing telecentric light for an image; and
a lens assembly, the lens assembly comprising:
a field lens having a planar surface and optically coupled to said faceplate,
a negatively powered spherical lens element,
an aspheric lens element,
a set of positively powered lens elements, and
a negatively-powered meniscus lens element adapted to locate the image.
10. A system for projecting an image, comprising:
a cathode ray tube including a resonant microcavity phosphor and having a faceplate, said cathode ray tube being capable of projecting telecentric light for an image;
a telecentric lens assembly including a field lens, and wherein said telecentric lens assembly is adapted to receive an image from said cathode ray tube;
wherein the field lens includes a planar surface optically coupled to the faceplate; and
wherein the lens assembly includes a planar gap or cavity between the faceplate and the field lens.
11. The system according to claim 10, wherein the lens assembly includes a focusing group including additional optical elements for transmitting and focusing the image from the field lens onto the projection surface.

12. The system according to claim 11, wherein the focusing group includes a selection of lens including any of a spherical lens adapted to redirect telecentric light for a projected image, a negatively-powered aspheric lens element adapted to correct residual curvature of light passing through the spherical lens, a set of positively powered lens elements adapted to adjust the size of the projected image, and/or a negatively-powered meniscus lens element adapted to locate the light received from the set of positively powered lens elements at a desired throw distance.

13. The system of claim 10 further comprising:
multiple cathode ray tubes, wherein each cathode ray tube is capable of projecting telecentric light for an image; and,
a telecentric lens system for each of said multiple cathode ray tubes.

14. A system for projecting an image, comprising:
a plurality of cathode ray tubes, wherein each of said plurality of cathode ray tubes includes a resonant microcavity phosphor and a faceplate, and wherein each of said cathode ray tubes is capable of projecting telecentric light for an image;
a plurality of telecentric lens assemblies optically coupled respectively to each of said plurality of cathode ray tubes, wherein each telecentric lens assembly is adapted to receive an image from its respective cathode ray tube.

15. A lens assembly for use in projecting a telecentric image, comprising:
a telecentric lens assembly adapted to receive an image from an image source, and that allows an image of said image source to be projected onto a projection surface, wherein said telecentric lens assembly comprises a spherical lens element, an aspheric lens element, and a set of positively powered lens elements.

16. The lens assembly according to claim 15, further comprising:

a cathode ray tube adapted to generate the image to be projected.

17. The lens assembly according to claim 16, wherein the image source is a cathode ray tube faceplate.

18. The lens assembly according to claim 17, wherein the cathode ray tube is a resonant microcavity phosphor device.

19. The lens assembly according to claim 18, wherein the telecentric lens assembly includes a field lens having a planar surface coupled to said image source.

20. The lens assembly according to claim 19, wherein the field lens is optically coupled to the faceplate.

21. The lens assembly according to claim 20, wherein the lens assembly includes a planar gap or cavity between the faceplate and the field lens.